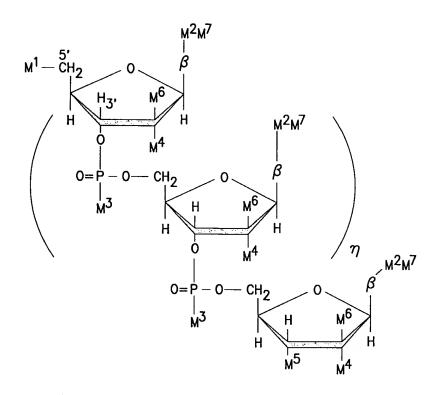
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 $\eta = 1 - 50$ M=H, OH, XR, Halogen, N₃

FIG. IA



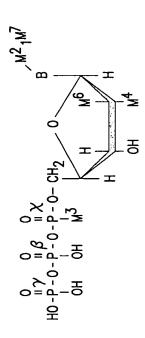
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	Σ.	M2	₩3	М5
Type Ia (base modified DNA)	ᆼ	XR/Hal	Ю	I
Type Ib (base modified RNA)	ᆼ	XR/Hal	용	НО
Type IIa (5'- modified DNA)	XR/Hal	エ	НО	x
Type IIb (5'- modified RNA)	XR/Hal	±	НО	НО
Type III (3' modified)	Ю	±	НО	XR/Hai
Type IVa (P- modified DNA)	НО	Ŧ	XR	±
Type IVb (P— modified RNA)	НО	Ŧ	X	Б

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Nucleoside Triphosphate Elongators:



Nucleoside Triphosphate Terminators:



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	M2	M3	M4	М5
Type A (DNA- Termination)	XR	НО	工	エ
Type B (DNA- Termination)	Ŧ	НО	I	X
Type C (DNA- Termination)	Ŧ	X	±	±
Type D (RNA— Termination)	XR	HO	용	I
Type E (RNA- Termination)	Ŧ	Ю	용	X
Type F (RNA- Termination)	I	XR	동	н

FIG. 2B



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X	R
-0-	-(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -ОН
	or -(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -O-Alkyl
-0-C-(CH ₂) _r -C-0-	-(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -ОН
-0-C-(CH ₂) _r -C-0-	or –(CH ₂ CH ₂ O) _m –CH ₂ CH ₂ –O–Alkyl
-NH-C-/-Č-NH-	-(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -ОН
Ö	or –(CH ₂ CH ₂ O) _m –CH ₂ CH ₂ –O–Alkyl
-NH-C-(CH ₂) _r -C-O-	-(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -ОН
Ö Ö	or -(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -O-Alkyl
-NH-C-NH-	-(сн ₂ сн ₂ о) _m -сн ₂ сн ₂ -он
Š Š	or -(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -O-Alkyl
-0-P-0-Alkyl 0	-(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -ОН
Ö,	or -(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -O-Alkyl
-0-S0 ₂ -0-	-(сн ₂ сн ₂ о) _т -сн ₂ сн ₂ -он
	or -(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -O-Alkyl
-0-C-CH ₂ -S-	-(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -ОН
ö	or -(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -O-Alkyl
,	(011 011 0) 011 011 011
-N S-	-(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -OH
	or -(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -O-Alkyl
-S-	-(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -OH
	or -(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -O-Alkyl
NH	-(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -OH
	or -(CH ₂ CH ₂ O) _m -CH ₂ CH ₂ -O-Alkyl

m = 0, 1-200r = 1-20

FIG. 3

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-H
Alkyl:-
$$(CH_2)_r$$
- CH_3 e.g.- CH_3 ,- C_2H_5 ,
and branched e.g. - $CH(CH_3)_2$

$$ICH_2(CH_2)_r$$
- $O-H$

$$2,3-Epoxy-I-propanol$$
- $(CH_2)_m$ - CH_2-O-H
- $(CH_2)_m$ - $CH_2-O-Alkyl$
- $(CH_2CH_2NH)_m$ - $CH_2CH_2-NH_2$
- $NH-(CH_2)_r$ - $NH-C$ - CH_2 - $NH-C$ - H_2 - $H_$

m = 0, 1-200r = 1-20

FIG. 4



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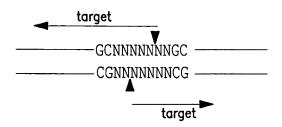


FIG. 5

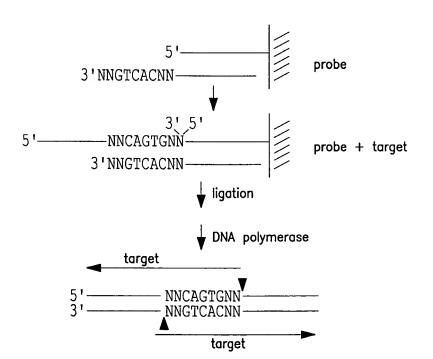


FIG. 6

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Nucleic Acid Structure	Calc		T _m (°C,	average 6	base composition) 5
		38	33	25	15
		33	25	15	3
		25	15	3	-14
		51	46	40	31
		46	40	31	21
		40	31	21	11

FIG. 7

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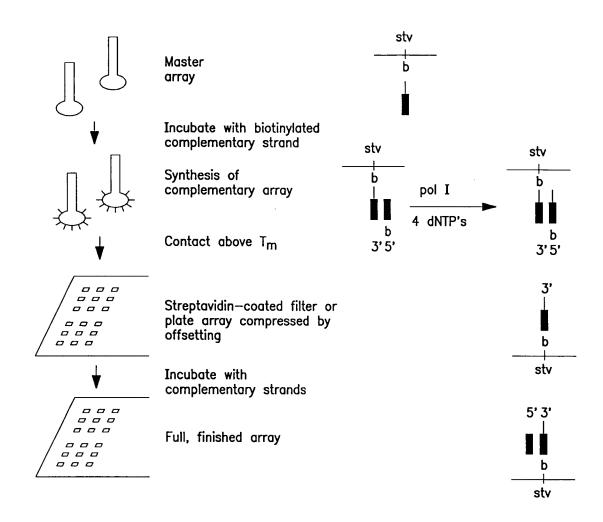
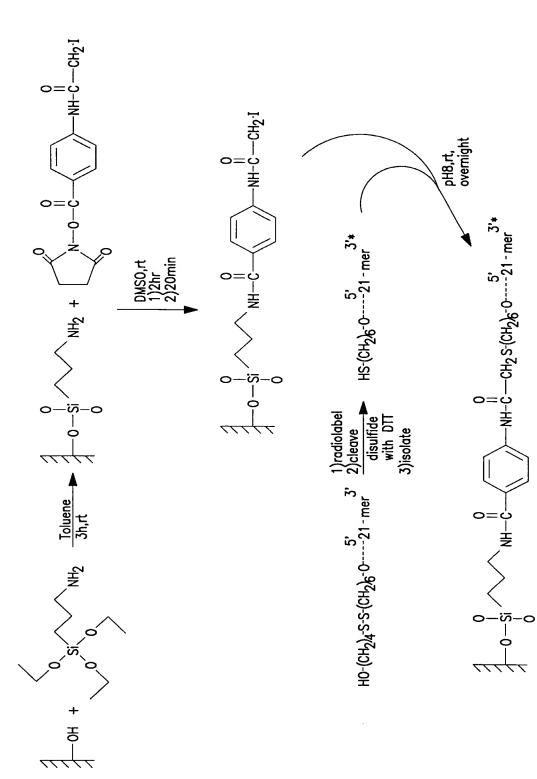


FIG. 8



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Reaction Scheme for the Covalent Attachment of DNA to a Surface





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Probe and target annealed

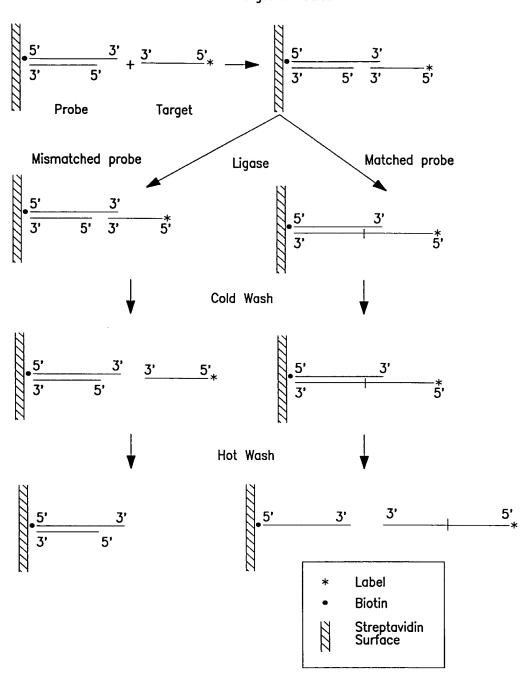
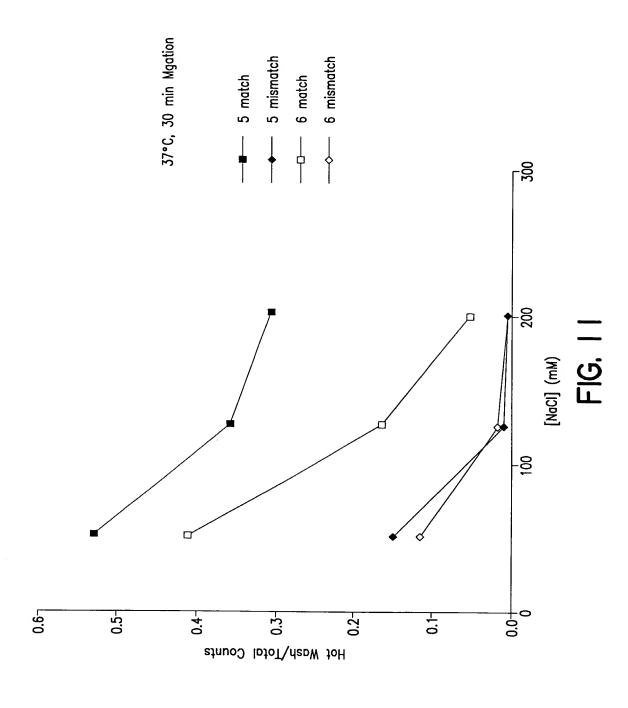


FIG. 10



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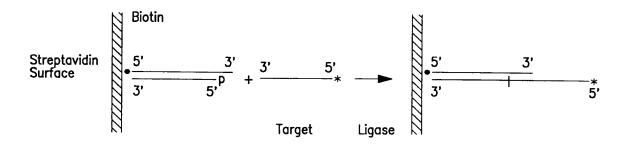


FIG. 12A

FIG. 12B



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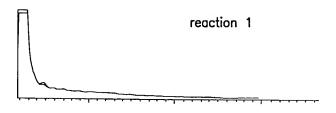


FIG. I3A

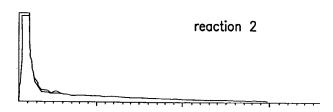


FIG. 13B

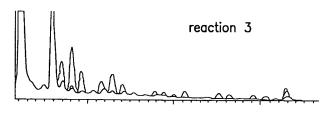


FIG. 13C

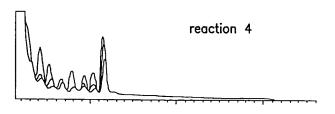


FIG. I3D



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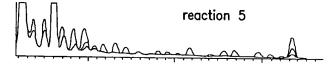


FIG. 13E

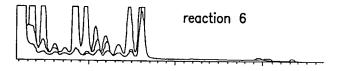


FIG. 13F

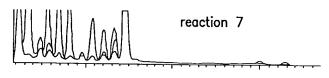


FIG. 13G

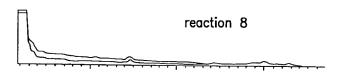


FIG. 13H

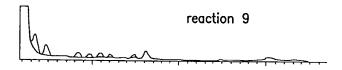


FIG. 13I

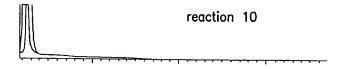
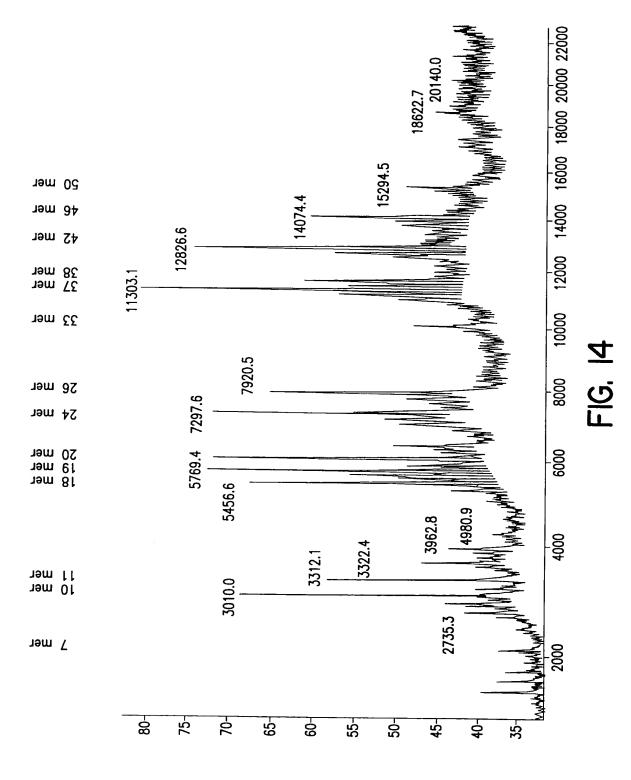


FIG. 13J

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FIG. 15



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